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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
SALVATORE, LYNDA	
ART UNIT	PAPER NUMBER
1771	15

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/619,535	Applicant(s) GROH ET AL.
	Examiner Lynda M Salvatore	Art Unit 1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-18,40 and 41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-18,40 and 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Applicant's amendment, Paper No. 14, has been entered. Claim 16 has been amended as requested.

2. Applicant's arguments have been carefully considered but are not found to overcome the 35 USC 112 2nd paragraph rejections set forth in sections 7-10 of the last Office Action.

3. Applicant's arguments with respect to claims 1-10,12-18,40 and 41 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

4. The Examiner has verified that the non-translated references listed on the international search report and Information Disclosure Statement are for a foreign application, which is a counterpart to the present application. Said references are initialed on the Applicant's PTO form 1449 as having been considered by the Examiner.

Claim Rejections - 35 USC § 112

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 10 and 16 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 40 and 41 are further rejected for their dependency on claim 16.

With regard to claim 10, the Applicant argues that those of ordinary skill in the art are well aware that techniques exist to thermally shrink fibers, which do not result in consolidation as well as techniques that do result in consolidation. This argument is not found persuasive on the grounds that the Applicant as not set forth which employed technique does not result in consolidation. The Examiner reviewed the disclosed various techniques for heat shrinking, however, the Applicant fails to teach which technique does not result in consolidation. Thus, the Examiner maintains that the phrase "thermally shrunken" functions at least in part to consolidate the fibers. The burden is upon the Applicant to evidence the contrary.

With regard to claim 16, the Applicant has amended this claim to delete the term "additional" and further argues that the rejection as set forth in section 10 of the last Office action is unclear since claim 1 does not recite the word "reinforcement". To clarify, claim 16 is indefinite because it is unclear to the Examiner what the Applicant means by reinforcements. Are the reinforcements recited in claim 16 different from or the same as the glass and synthetic fiber materials recited in claim 1?

7. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the Examiner if the filamentary non-woven of polyesters is heat shrunken before or after needling. Heat shrinking before needling would be redundant with respect to claim 1 and after needling would heat shrink twice. Thus, it is not understood if the Applicant intends to heat shrink the filamentary non-woven of polyesters twice.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Applicant's specification fails to teach a shrinking method that does not result in consolidation. The Applicant's specification teaches the application of heat, which is how the Baravain et al., reference below teaches imparting shrinking, and consolidation (Column 2, 63-65 and Column 3, 45-55).

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1,4-6,9 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Baravian et al.

The patent issued to Baravian et al., teaches a two-layer textile reinforcement comprising a thermostabilized consolidated non-woven first base layer needled to a second mineral fiber layer, which may in the form of a grid or cloth of continuous or discontinuous mineral filaments (Abstract). Baravian et al., teaches the application of heat to consolidate the non-woven and preferably comprises a sheet of continuous filaments of a thermoplastic synthetic polymer, having no binder fibers, such as a polyester, co-polyester, or polyamide (Column 2, 63-65 and Column 3, 45-55). Specifically, Baravian et al., teaches a non-woven sheet of polyolefin

filaments, which is calendared under, heat and pressure to achieve the desired shrinkage and density (Column 4, 45-57). The second mineral layer preferably takes the form of a scrim of mineral fibers formed by wet or dry non-woven processes, more particularly discontinuous glass fibers with chemical or thermal bonding (Column 3, line 65-Column 3, line 5). In this case, chemical bonding is interpreted as any type of resinous based binder. With respect to the limitation that a portion of the fibers of the synthetic non-woven layer passes through the non-woven mineral layer, Baravian et al., teaches needling the first and second base layer together, which would inherently pass a portion of fibers from the first layer to the second layer.

With respect to claims 14 and 15, the method limitations involving the needle draft are not given patentable weight at this time since they do not effectively manipulate the final product.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being anticipated by Baravian et al.

Baravian et al., fails to explicitly teach the limitation of having polyester filaments penetrate through the non-woven containing glass fibers and to a side opposite that on which the synthetic non-woven layer is disposed. However, Baravain teaches needling two fibrous structures together, which would inherently cause the filaments to penetrate through the layers to

the opposite side of the second non-woven layer. As such, the teachings of Baravain would enable one of ordinary skill in the art at the time the invention was made to produce product having the said claimed limitations of the instant invention.

14. Claims 2,12 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Baravian et al as applied to claim 1 above, and further in view of Heidel et al., US 5,171,629.

Baravian et al., fails to teach what binders are suitable for chemically binding the fiberglass non-woven, however, the patent issued to Heidel et al. discloses a glass fiber mat and synthetic fiber mat that are needled together. Heidel et al. teaches pre-consolidating the glass fiber mat with polymer binders or melamine resins (Column 2, lines 14-17). Therefore, motivated to provide a stabilized mineral fiber non-woven layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polymer binders or melamine resins taught by Heidel et al., to consolidate the glass fiber layer of Baravian et al.

With respect to claims 12 and 13, Heidel et al., lacks an explicit teaching as to the amount of binder, but does state that low amounts are suitable due to the bonding strength melamine resins. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the amount of resin used to pre-consolidate the glass fiber mat. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum value of a results effective variable involves only routine skill in the art. *In re Boesch 272, 205 USPQ 215 (CCPA 1980)*

14. Claims 3, 7,8. 16,40, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baravian et al as applied to claim 1 above, and further in view of Schops et al., US 6,235,657.

Baravian et al., fails to teach two non-woven layers wherein the basis weight of the non-woven synthetic layers are equal or different, however, the patent issued to Schops et al., discloses needling together a three layer laminate comprising two synthetic spunbonded layers and at least one reinforcing layer disposed between the two synthetic layers (Abstract and figure 1). The spun-bonded webs are made of continuous filaments composed of melt-spinnable materials such as polyester (Column 2, lines 30-40). In one embodiment, the reinforcing layer includes yarns laid in a longitudinal direction (Column 3, lines 38-49). Therefore, motivated to provide multi-layer composite having added strength and dimensional stability, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Schops et al., and form the composite of Baravian with two synthetic non-woven layers sandwiching a layer of reinforcing yarns.

With respect to claim 8, Schops et al., teaches using two synthetic non-woven webs where one of the webs is 20% thicker than the other (Column 5, lines 13-16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the thickness of each synthetic non-woven layer to enhance the reinforcement of the laminate. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 617 F. 2d 272, 205 USPQ 215 (CCPA1980).

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baravian et al as applied to claim 1 above, and further in view of Cochran et al., US 4,892,780.

Baravian et al., fails to specifically teach the type of glass fiber employed, however, the patent issued to Cochran et al., discloses a fiber reinforcement composite comprising a fibrous

substrate having staple fiber applied to one or both sides (Abstract). The fibrous substrate may be a knit, woven, or non-woven of high strength fibers, filaments, or yarns of glass, acrylics or carbon. The staple fiber add-on may be polyester, polyamide, or polyethylene. Cochran et al., teaches in example 15 a composite of E-glass fibers.

Therefore, motivated to produce a composite having strength and electrical properties it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the E-glass fibers taught by Cochran, as the glass fibers in the invention Baravian et al.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynda M Salvatore whose telephone number is 703-305-4070. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

ls
April 7, 2003

CHERYL A. JUSKA
PRIMARY EXAMINER